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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/601,434 | 09/01/2000 | Nu Yu | 1998/F-009 | 3032 |

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EXAMINER

ZAHN, JEFFREY N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/601,434

Applicant(s)

YU ET AL.

Examiner

Jeffrey N Zahn

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-32 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements and relationships, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the laser cavity, the reflectors inherent in a laser cavity, and a power supply. The claims fail to properly set forth a functioning laser. The proper relationships of these elements to the others can not be intuited. Claim 17 is especially incomplete of the independent claims, and gives no detail whatsoever on how the excitation of the spiro compound is accomplished. How can anyone of ordinary skill determine the scope of this claim?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki et al. US 5,568,417 (herein after known as Furuki) in view of Crivello et al. US 4,026,705 (herein after known as Crivello). Furuki teaches in Fig. 17 a substrate 60, a first electrode 61 on the substrate, and organic layer 63 on the first electrode, and a second electrode 64 on the organic layer. Furuki teaches the invention as outlined in the rejection above, but fails to teach a solid spiro laser dye as the organic layer. However, Crivello teaches such a solid dye. The Crivello invention is drawn to a photo induced polymerization of organic dyes. Column 6 lines 7 – 16 discuss compositions that can be used in the photo polymerization process, and listed among them is spiro compounds. Therefore, a solid form of spiro compounds is known in the art. Since the spiro compounds are organic, they could very well be substituted for the organic film of the Furuki invention. Therefore, it would be obvious to one of ordinary skill in the art to substitute the solid organic material in the Furuki invention with the spiro solid organic material as taught by Crivello.

Claims 22-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki in view of Crivello as applied to claims 5, 9 and 17 above, and further in view of Xie et al. US 5,989,737 (herein after known as Xie).

Furuki in view of Crivello teaches the invention as outlined in the rejection above, but fails to teach spirobifluorene. However, Xie teaches spirobifluorene in his patent, see column 6 lines 7 – 37 see the spirobifluorene in context. Therefore, it would be obvious to one of ordinary skill in the art to use as the spiro compound of Furuki in view of Crivello the spiro compound spirobifluorene as taught by Xie.

Claims 22-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki in view of Crivello as applied to claims 5, 9 and 17 above, and further in view of Poot et al. US 3,958,815 (herein after known as Poot). Furuki in view of Crivello teaches the invention as outlined in the rejection above, but fails to teach alkyl, alkoxy, ester, phenyl, biphenyl, naphthyl, thienyl and furyl. However, Poot teaches the well-known substances of alkyl, alkoxy, ester, phenyl, biphenyl, naphthyl, thienyl and furyl in conjunction with a spiro compound in his patent, see column 2 lines 22 – 28, columns 3 and 4 and the table. Therefore, it would be obvious to one of ordinary skill in the art to use with the spiro compound of Furuki in view of Crivello the alkyl, alkoxy, ester, phenyl, biphenyl, naphthyl, thienyl and furyl as taught by Poot.

Response to Arguments

Applicant's arguments filed 09 December 2002 have been fully considered but they are not persuasive.

Specifically, the Applicant makes the argument that Furuki does not disclose a laser; but only a fluorescent device. As discussed above in regards to rejections based on 35 U.S.C. 112 , paragraph 2, the Applicant has not claimed the essential elements and cooperative relationships of the elements to give the preamble feature of "a laser" any significant patentable weight for purposes of this examination. Accordingly, the prior art rejections cited are not withdrawn/overcome.

Conclusion

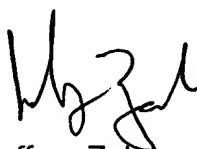
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey N Zahn whose telephone number is 703-305-3443. The examiner can normally be reached on M-F: 8:30-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Jeffrey Zahn
February 23, 2003


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